STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

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Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

April 1, 1983

Mr. LeRoy Fyock
Environmental Coordinator
Chevron Resources Company
Manila Star Route
Vernal, Utah 84078

RE: Review of January 19, 1983
Mining and Reclamation Plan
(MRP) Addendum
Chevron Resources Company
Vernal Phosphate Operations
ACT/047/008
Uintah County, Utah

Dear Mr. Fyock:

Please find the enclosed list of Division comments and questions prepared by the technical staff concerning your MRP addendum submitted January 19, 1983.

These comments have been divided into two sections: (1) a response by number referenced to your January 19, 1983 letter and November 23, 1982 cross-referenced to Section 2; and, (2) Section 2 - a compliance breakdown by regulation on the MRP as a whole.

We hope this approach will be useful in covering all historic questions as well as those generated by the MRP per se.

Thank you for the most informative and enjoyable tour of the operations. It was very helpful in the preparation of the enclosed document. We would also like to commend Chevron Resources for the good state of maintenance on the property and for the orderly and workmanlike manner in which operations are conducted.

Should you have any questions or wish to arrange a meeting to assist in the preparation of your response, please feel free to call Thomas L. Portle of my staff or myself.

Sincerely,

JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

JWS/TLP:btb

Enclosures

Section IA.

January 19, 1983 letter (response to DOGM letter of December 13, 1982).

Reference #

1. Appears adequate.

2. Addressed both in Annual Operations and Progress Report and the Mining and Reclamation Plan (MRP).

   Also, see comments in Section 2 under M-10(12) and M-3(2)(e).

3. See Hydrology Section (Section II) under M-10(11) V.

4. As above - see M-10(11) VI.

5. The application contains overburden analysis in Appendix 3. However, it does not identify where samples were taken. It is lacking in that analysis for molybdenum and boron are not included and could pose a concern in this pH environment. They are listed in the suitability guidelines but no data are presented.

6. Which sample numbers correspond to the Mackentire Tongue Formation materials.

7. A map of more specific scale would be useful in the review at the SAG mill area.

Section IB.

November 23, 1982 letter (response to DOGM letter of July 13, 1982).

Reference #

1. See response under #3 to January 19, 1983 letter.

2. See response under #4 to January 19, 1983 letter.

3. Comments regarding engineering of the riprap in the Brush Creek culvert area were not found in the plan. Please provide. Also, see comment under M-3(1)(e) III.

4. See response under #2 to January 19, 1983 letter.

5. See response under #5 to January 19, 1983 letter and under Section 2, M-3(1)(g), M-3(2)(c), M-10(6) and M-10(14).

6. See response under #7 to January 19, 1983 letter.

7. Bond estimates may be accomplished using the enclosed forms. These will be in draft form since they will be subject to DOGM approval and will be upgraded at such time as the language and commitments in the Addendum package are finalized.

8. DOGM has yet to receive any information from Clay Perschon of the Division of Wildlife Resources (DWR).

MINING AND RECLAMATION PLAN COMMENTS

Section 2

Rule M-3(2)(e)-TLP

On page 18 of Appendix I, the applicant expounds on the benefits of mulch application, using on-site data, with regard to increasing the success of grass germination and moreso with regard to shrub establishment and survival. However, on page 9, "Revegetation," it is stated that neither mulch or fertilizer will be generally used.

Rule M-10(14)-TLP

On page 6 in the MRP, the applicant states that "macronutrient analysis" will be done to ensure revegetation success.

1. Please clarify whether this is in reference to topsoil or substitute (the mixture of topsoil, subsoil, gravels and organic debris mentioned on page 5). If so:

   a. Change the word "topsoil" in the last sentence of page 5 to "substitute material."

   b. Much more explanation of the nature of the substitute material is required. Please describe it with regard to particle size, homogeneity and a complete soil characterization similar to that done in Appendix 2 for Pannel B. How often will sampling be necessary to reflect changing conditions? Also, this approach should be first initiated in a controlled situation (test plots).

2. Please expand both on the sampling methods and on the parameters to be analyzed for upon topsoil redistribution. Please state that analysis will be conducted after redistribution. The applicant should reconsider the validity of the statement "extremely sparse" topsoil (page 5) in light of soil analysis by depth tables presented in Appendix 2. Page 9 "Revegetation" states fertilization will not be done as a general practice. This should be changed to allow for fertilization as dictated by pertinent soils analysis.

The bulk of the soil analysis which are necessary to make decisions such as the removal depth of topsoil were done for Pannel B (Appendix 2). Minimal data are presented for Pannel C. When will Pannel C be mined? When operations proceed into Pannel C, the analysis for Pannel C soils should be upgraded to the level of detail presented for Pannel B materials. Laboratory tests will aid in detecting any soil physical or chemical conditions which may be detrimental to plant growth and to provide any nutrients shown to be deficient. These tests should include, but not be limited to, soil texture,

pH, electrical conductivity, SAR (Sodium Absorbtion Ratio), available nitrogen, available phosphorus (percent or ppm), available potassium, soluble calcium, magnesium and sodium (expressed as meq/100 g). The applicant presents a chart in Appendix 2 dealing with topsoil suitability but lacks sufficient data to utilize it.

By the interpretation of these data by depth, soil removal plans can be drawn up which reflect the actual depth of removal as governed by any limiting or restrictive features. At that time, soil isopach maps should be drawn up for field use to allow for proper soils handling.

Please upgrade Table I on page 6 to include topsoil/substitute material volumes associated with the projected activity levels.

Storage and Protection

What measures will be employed to achieve adequate topsoil stockpile protection? Will drainage be diverted away from piles? Will berms be used to retain soil? Will terraces be employed on soil stockpiles? Will seeding and/or mulching be utilized or will other surface stabilizing agents or measures be used?

A. What is the anticipated final depth of each of the stockpiles?

B. What will be the probable dimensions of each stockpile at its greatest extent?

C. What will be the slope of the stockpiles? Will terraces be employed?

Redistribution

A balance sheet should be provided to account for the current topsoil/ substitute material volume status (please see enclosed chart to use as a model). Estimates should include the total volume need to effect reclamation and projections as to whether or not this volume exists. If not, alternatives should be discussed.

Rule M-3(2)(c)-TLP

On page 5 of the MRP, the concept of alternative uses for "vegetation and debris" is advanced. Please expand on this narrative by providing how location and time of year relate to the decision as to which alternative is/will be chosen.

Does the operator have a burning permit? What type of an implement will be used to mulch this "slash" and where will the mulch be used? If it is incorporated into the overburden, will this material be stockpiled? If so, what is the potential for the development of slippage planes due to organic matter decomposition.

Rule M-10(6)-TLP

Data on the overburden are presented in Appendix 2. Please describe and/or provide a map showing the sample locations. What overburden data are representative of Pannel B materials?

Editorial Comments

Page 5 - change Attachment #2 to Appendix #2.

Page 5 - change "verbal" to "narrative describing."

Rule M-3(2)(e)-SCL

The seed mixture to be used for reclamation during 1983 (page 8) consists mostly of introduced grasses and forbs and is not completely adequate for a postmining land-use of wildlife habitat. Native forbs and perennial shrubs such as those used in the 1983 shrubland seed mix and out plantings should be seeded or planted over at least part of the reclaimed area, particularly in areas of big game utilization prior to mining. If different seed mixes will be used in different areas, a map delineating where each mix will be used should be submitted.

The revegetation plan on page 9 is nonspecific. Seeding rates should be given in Pure Live Seed (PLS) per acre. Drill and broadcast seeding are generally done at different rates, which should be listed. Will hand seeding be covered? According to the reclamation report, roughed up areas did best in 1980. Also, mulching worked well with shrub plantings in 1979. The applicant should reflect on the employment of these techniques in areas of shrub plantings, where feasible.

A complete revegetation plan including seed lists and any amendments to be used must be submitted to the Division for review at least 60 days prior to any revegetation. If reclaimed areas will need to be protected from grazing by domestic or wild animals, methods to do so need to be approved in advance. Maps showing where reclamation work will be done in the next calendar year should be submitted with the Annual Report until reclamation catches up to current mining.

Rule M-10(12)(2)-SCL

The success standard for each area to be revegetated should be determined. Native Plants' basline vegetation study showed two different habitat types with quite different native ground covers. Accordingly, there may be more than one success standard or an average value can be used for an overall standard. Revegetation success standards should also be correlated with use of different seed mixes.

Monitoring of reclaimed areas during the bond release period should be discussed. Monitoring methods should be outlined and a yearly report sent to DOGM summarizing the revegetation success of various areas. Results of test plots planted in 1982 should also be submitted yearly until such time as success or failure of treatments can be ascertained. Revegetation and test plot results can be used to further refine reclamation seed mixes and techniques.

Hydrology

Rule M-3-DWD

(1)(d) The operator shall supply an inventory of all wells and springs on and adjacent to the mine plan area.

(1)(e) The operator shall supply drainage plans aimed at diverting undisturbed area runoff away from disturbed areas where possible.

Please describe how runoff is controlled at the minesite. Describe the use of catch basins, drainage pits (in french drains), diversions, berms and other runoff control structures.

Please supply drainage plans for controlling disturbed area runoff. Maps should be included in the plans which indicate the directions of overland flow (controlled and natural) and clearly depict all berms, culverts, sedimentation ponds, tailings ponds, diversions and other sediment control structures.

This should address all areas of the mine project including the facilities areas, slurry pipe, tailings area and mining areas.

The Division requests that an explanation as to the ultimate fate of surface runoff after it enters the french drain system. Are local ground water levels being effected?

Rule M-3(1)(f)

The operator shall supply information as to the depth of water bearing strata encountered in test borings or case holes.

Please describe the impacts to downstream water systems that may result from waters coming in contact with the mined ore or disturbed overburden.

Rule M-3(2)(a)-DWD

Additional data are necessary to depict streams and springs on and adjacent to the mine plan area which includes the seasonal variation of discharge and water quality.

The operator shall supply the Division with plans for future tailings ponds prior to their construction.

Rule M-10(8)-DWD

The operator shall supply information concerning the location and extent of natural drainage fills (french drains).

Please submit all water monitoring data obtained to date for the project area (surface and ground water).

Engineering

M-3(2)(d)-PGL

In the event of a slope failure, a commitment should be made to notify the Division and take appropriate measures recommended and/or approved by the Division to mitigate the situation

Please submit the plans previously approved by Dam Safety for the tailings dam as well as any recent modification to this approval in which the enbankment will be raised.